

# Celebrating Women Scholars in Athletic Training

**Julie M. Cavallario, PhD, ATC; Cailee E. Welch Bacon, PhD, ATC;  
Lindsey E. Eberman, PhD, LAT, ATC; Stacy E. Walker, PhD, ATC**

The literary development of every age has its peculiarities, the circumstance most characteristic of the present time, is the superior distinction, relatively, which women have acquired in some of the most brilliant departments of authorship. . . . The causes of this honourable peculiarity of our own days, like most other changes in society, would probably be found to lie among influences which are so subtle as to elude inquiry. It is obvious, however, that there has been, through two centuries, a progressive advance in the relation which the female sex has held to the intellectual condition of the race, and their influence upon the public mind.<sup>1</sup>

This passage, written in 1846, noted the peculiarity of equality in female authorship in all of the countries of Europe and “across the water.”<sup>1</sup> The author marveled at the ability of women to be equal in authorship *capability*. However, the reality of published female-authored works in medicine and the sciences does not reflect such equality.<sup>2,3</sup>

Scientific journals persistently underrepresent women among editors and reviewers. In leading journals, women consistently appear as first or last author less often than their male counterparts.<sup>2,3</sup> In fact, data indicate an inverse correlation between the 5-year impact factor of the journal and the percentage of female first and last authors. The greater the impact factor of the journal, the less female representation in lead authorship positions.<sup>2,4</sup> Even when invited commentaries were examined, men were more likely to be approached to submit written work.<sup>5</sup> Moreover, women were more likely to carry out the bulk of the data collection and experimental procedures, whereas men were more likely to complete and receive credit for authorship responsibilities.<sup>6</sup>

Persistent underrepresentation of lead female authors has far-reaching implications, including reduced representation of women scholars in the advanced stages of academic careers.<sup>7</sup> In some science, technology, engineering, and math fields, the majority of graduate students are women, yet those numbers progressively decrease when tracked through doctoral, postdoctoral, and faculty positions.<sup>2</sup> A more recent study<sup>8</sup> of gender differences in the authorship of original research demonstrated that junior women faculty were more likely to be mentored by and coauthors with senior women faculty than by and with senior male faculty. These findings suggest that the junior-senior faculty mentor dyads could create another potential barrier to female scholars being published during their formative years. Although the roots of gender disparities in academia and

administrative positions are complex, the contributions of gender discrepancies in publication on retention, progression, promotion, and tenure simply cannot be ignored. Influential science and its associated publications constitute the primary pathway for career advancement, and access to this pathway for female authors has historically been limited.

Another postern for career advancement is through service as a peer reviewer. Women reviewers are called on less often than their male counterparts, and this discrepancy is attributed to bias on the parts of both authors and editors who suggest men to review manuscript submissions.<sup>3</sup> Peer review is a quality-assurance measure in the sciences and often serves to safeguard the accuracy, relevance, and significance of a profession's body of work. When that work is safeguarded primarily by 1 gender, a more singular perspective is likely to emerge within the science.

A recent report by the United Nations<sup>9</sup> indicated that no country in the world had reached a point of gender equality with respect to assumed characteristics and bias in gender roles. Moreover, progress is actually slowing. The authors predicted that, based on current trends, the gender gap is more than 250 years away from being closed. Gender bias is not only a man's problem; 90% of men and 84% of women possessed gender bias against women.<sup>9,10</sup> This universal bias was reflected in the aforementioned study regarding peer reviewers: both male and female editors and male and female first authors were more likely to suggest male reviewers as leading experts in their field of study.<sup>3</sup>

A review of the lead authorship of peer-reviewed publications in the *Journal of Athletic Training (JAT)* showed that yearly female lead authorship ranged from 34.1% (46/135) in 2015 to 52.6% (n = 71/135) in 2018, with an average of 44.5% during the past 5 years. Women comprise more than half of the National Athletic Trainers' Association (NATA) membership. Thus, whereas female lead authorship in *JAT* exceeds that of some other journals in science and medicine, it does not yet consistently reflect the gender composition of the profession.

Lead and senior authorship in the profession of athletic training also contributes to recognition within the field, another consideration for career advancement. For example, the NATA's prestigious Fellow status requires dissemination of new knowledge in the field of athletic training. A study of Fellow recipients in the past 10 years indicated that despite accounting for a majority of the profession, women represented just over 30% of NATA

Fellows. Thus, the cycle of underrepresentation in authorship contributes to underrepresentation of women among professional award recipients.

Our goal for this special issue was not topical but rather constructionist: identifying women scholars in athletic training and providing an opportunity to collectively acclaim the work being completed by the many exceptional scholarly women in our profession. The criteria for submission were female lead authorship and majority female authorship. Each manuscript was overseen by female editorial staff and was reviewed by female reviewers. However, in no way does this issue reflect the totality of work being done by the many amazing female athletic training scholars. When we proposed and pursued this special issue of *JAT* highlighting women scholars in athletic training, we specifically sought to address the consistent bias that influences female authorship in athletic training publications. Although the focus of this editorial is to summarize the problem, the intent of the issue is to celebrate the solution.

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*Editor's note.* Julie M. Cavallario, PhD, ATC, is an assistant professor of rehabilitation sciences at Old Dominion University, Norfolk, Virginia. Cailee E. Welch Bacon, PhD, ATC, is an associate professor of athletic training at A.T. Still University, Mesa, Arizona, and a member of the *JAT* editorial board. Lindsey E. Eberman, PhD, ATC, is a professor of athletic training at Indiana State University, Terre Haute. Stacy E. Walker, PhD, ATC, FNATA, is a professor of athletic training at Ball State University, Muncie, Indiana, and a *JAT* associate editor.

Address correspondence to Julie M. Cavallario, PhD, ATC, School of Rehabilitation Sciences, Old Dominion University, 2134A Health Sciences Building, Norfolk, VA 23529. Address email to [Jcavalla@odu.edu](mailto:Jcavalla@odu.edu).